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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/233,145	01/19/1999	SHUNPEI YAMAZAKI	0756-1915	7892

7590

07/30/2002

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SUITE 600  
MCLEAN, VA 22102

EXAMINER

DUONG, TAI V

ART UNIT

PAPER NUMBER

2871

DATE MAILED: 07/30/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.  
09/233,145

Applicant(s)  
YAMAZAKI ET AL.

Examiner  
TAI DUONG

Art Unit  
2871



-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on Apr 11, 2002
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-130 is/are pending in the application.
- 4a) Of the above, claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-55 is/are allowed.
- 6) ☒ Claim(s) 56-130 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claims \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some\* c) ☐ None of:

1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\*See the attached detailed Office action for a list of the certified copies not received.

- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).  
a) ☐ The translation of the foreign language provisional application has been received.

- 15) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s). 23

- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

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The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: the specification does not disclose the newly claimed feature “ wherein a surface of said pixel electrode is conformal to the rounded edge of said leveling film at said second contact hole”, as recited in claims 56, 58, 61 and 63.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 57, 59, 60, 62, 64, 65, 67, 69, 70, 72, 74, 75, 77, 79, 80, 82, 84, 85, 87, 89, 90, 92, 94, 95, 97, 99, 100, 102, 104, 105, 107, 109, 110, 112, 114, 115, 117, 119, 120, 122, 124, 125, 127, 129 and 130 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 57, 59, 60, 62, 64 and 65 are confusing with respect to the specification and the drawings because they recite a gate insulating film interposed between the gate electrode and the semiconductor film, and an (additional) insulating film comprising an inorganic material formed over the semiconductor film . However, the specification, Fig. 7(F), and Fig. 9(F) disclose only one (gate) insulating film interposed between the gate electrode and the semiconductor film, not two insulating films interposed between the gate electrode and the semiconductor film as recited in the above claims. The remaining claims are also rejected since they depend on the indefinite claims.

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The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 56, 58, 61, 63, 66, 68, 71, 73, 76, 78, 81, 83, 86, 88, 91, 93, 96, 98, 101, 103, 106, 108, 111, 113, 116, 118, 121, 123, 126 and 128 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 1-156725 (JP'725, cited in the Office action dated 6/25/99) in view of Wakai et al (Wakai'899, US 5,055,899 cited in the IDS dated 1/19/99).

In this rejection, the terms "rounded" and "conformal" are broadly interpreted by the examiner as "not angular" and "to be similar in form", respectively. The only differences between the display device of Fig. 4 of JP'725 and that of the instant claims are the JP'725 is silent about the gate insulating film 44 comprising an inorganic material, the semiconductor 43 comprising crystalline silicon, and the display device is used as a television (see the English translation of JP'725 in parent application 08/566,897). As apparent from Fig. 4 of JP'725, the lower surface of the pixel electrode 48, which contacts the leveling film 52, is also conformal to the rounded edge of the leveling film at the second contact hole. Wakai' 899 discloses that it is well-known in the art to employ a gate insulating film comprising an inorganic material (silicon oxide, silicon nitride; col. 2, lines 1-4). Thus, it would have been obvious to a person of ordinary skill in the art in view of Wakai'899 to employ a gate insulating film comprising an inorganic

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material for obtaining a gate insulating film with small thickness and good insulating characteristics. Also, it would have been obvious to employ crystalline silicon (polysilicon) in the display device of Fig. 4 for obtaining thin film transistors (TFTs) with high mobility, as compared to amorphous silicon. Also, it is well-known to employ active matrix liquid crystal displays (AMLCD) in televisions because of the compactness and low operating voltages of AMLCDs, as compared with cathode ray tube type televisions.

Applicant's remarks have been fully considered but are not persuasive for the reasons mentioned in the above rejections.

Claims 57, 59, 60, 62, 64, 65, 67, 69, 70, 72, 74, 75, 77, 79, 80, 82, 84, 85, 87, 89, 90, 92, 94, 95, 97, 99, 100, 102, 104, 105, 107, 109, 110, 112, 114, 115, 117, 119, 120, 122, 124, 125, 127, 129 and 130 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action.

Claims 57, 59, 60, 62, 64, 65, 67, 69, 70, 72, 74, 75, 77, 79, 80, 82, 84, 85, 87, 89, 90, 92, 94, 95, 97, 99, 100, 102, 104, 105, 107, 109, 110, 112, 114, 115, 117, 119, 120, 122, 124, 125, 127, 129 and 130 are allowable over the JP'725 and Wakai'899 references because they do not disclose or suggest "a gate insulating film interposed between the gate electrode and the semiconductor film, and an (additional) insulating film comprising an inorganic material formed over the semiconductor film" in combination with the other elements, as recited in claims 57, 59, 60, 62, 64 and 65.

Claims 1-55 are allowable.

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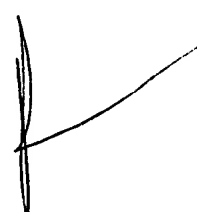
Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication should be directed to Tai Duong at telephone number 703 308-4873.

  
TVD

7/26/02

  
KENNETH PARKER  
PRIMARY EXAMINER